WE CLAIM:

1. A system for transmitting modem across a packet network with reduced bandwidth, and improved resistence to network packet loss, comprising:

a first processor for connection between a first modem and a first side of said packet network for:

providing a local interface to said first modem;

demodulating the full duplex data stream from said first modem into bits;

packetizing the bits for transport over an IP network; and

remodulating the data stream from a remote end, and

a second processor for connection between a second modem and a second side of said packet network for:

providing a local interface to said second modem;

demodulating the full duplex data stream from said second modem into bits;

packetizing the bits for transport over an IP network; and

remodulating the data stream from said first end.

2. The system of claim 1, further comprising:

means for establishing optimal modulation and rate parameters for commination between said first and second modems.

3. The system of claim 2, wherein said means for establishing optimal modulation and rate parameters includes the exchange of signaling messages to determine the best commonly

supported data rate.

4. The system of claim 3, wherein said means for establishing optimal modulation and rate parameters further includes:

means for independent connection of said first and second modems if no commonly supported data rate is determined.

5. In a system wherein an originating modem terminal equipment MTE connects to an intermediate digital network via an originating modem relay unit MRU and wherein a destination modem terminal equipment connects to the network via a destination modem relay unit, a method of providing modem communications comprising:

the originating modem terminating equipment sending data to the destination modem terminating equipment via the originating modem relay unit and the destination modem relay unit;

the originating modem relay unit sending the data to the destination modem relay unit; and

while the destination modem relay unit is waiting for data from the originating modem terminating equipment, the destination modem relay unit maintaining communication with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment.

6. The system of claim 5, wherein said modem relay unit includes:

a modem driver connected to said digital network,

a modem network driver connected to said modem, and

a modem relay protocol unit connected between said modem driver and said modem network driver, to maintain state and to format modem data for said digital network.

7. In a system wherein an originating modem terminal equipment connects to an intermediate digital network via an originating modem relay unit and wherein a destination modem terminating equipment connects to the network via a destination modem relay unit, a method of receiving a modem communication comprising, by the destination modem relay unit:

receiving data from the originating modem terminating equipment; and

while waiting for data from the originating modem terminating equipment, maintaining communication with the destination modem terminating equipment to prevent protocol timeouts of the destination Modem terminating equipment,

8. A method of receiving a modem communication at a destination modem terminal equipment from an originating modem terminating equipment via an intermediate digital network, wherein the destination modem terminating equipment connects to the network via a destination modem relay unit, the method comprising, by the destination modem relay unit:

receiving data from the originating modem terminating equipment; and

while waiting for data from the originating modem terminating equipment, maintaining communication with said destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment.

9. The method of claim 7 wherein the network is of unknown and unpredictable delay.

10. A method for transmitting modem across a packet network with reduced bandwidth, and improved resistence to network packet loss, comprising:

receiving a modem signal having a control portion and a data portion, from a first modem;

separating said control portion from said data portion;

providing a control signal to said first modem as a local interface;

packetizing said data portion for transmission over said packet network to a second modem.

11. The method of claim 10, further comprising:

establishing optimal modulation and rate parameters for commination between said first and second modems.

12. The method of claim 10, further including:

exchanging signaling messages to determine the best commonly supported data rate.

13. The system of claim 12, further including:

determining when no commonly supported data rate is available; and

independently connecting said first and second modems if no commonly supported data rate is determined.

14. The modem transport method of Claim 10, further comprising the step of:

providing data packets containing a first series of packets and a redundant series of data packets each series containing modem data, across said packet network.

15. The modem transport method of Claim 14, wherein:

said provisioning of said redundant series is delayed by a predetermined number of packets from said provisioning of said first series of packets.

16. The method of Claim 15, wherein said data packets are modem data.

17. The method of Claim 15, wherein said delay is selected to accommodate expected packet loss and to provide acceptable delay.

* * * * *